

**UNITED STATES OF AMERICA
UNITED STATES DEPARTMENT OF ENERGY
OFFICE OF ELECTRICITY DELIVERY AND ENERGY RELIABILITY**

2012 NATIONAL ELECTRIC TRANSMISSION CONGESTION STUDY

**COMMENTS OF
CLEAN LINE ENERGY PARTNERS LLC**

January 31, 2012

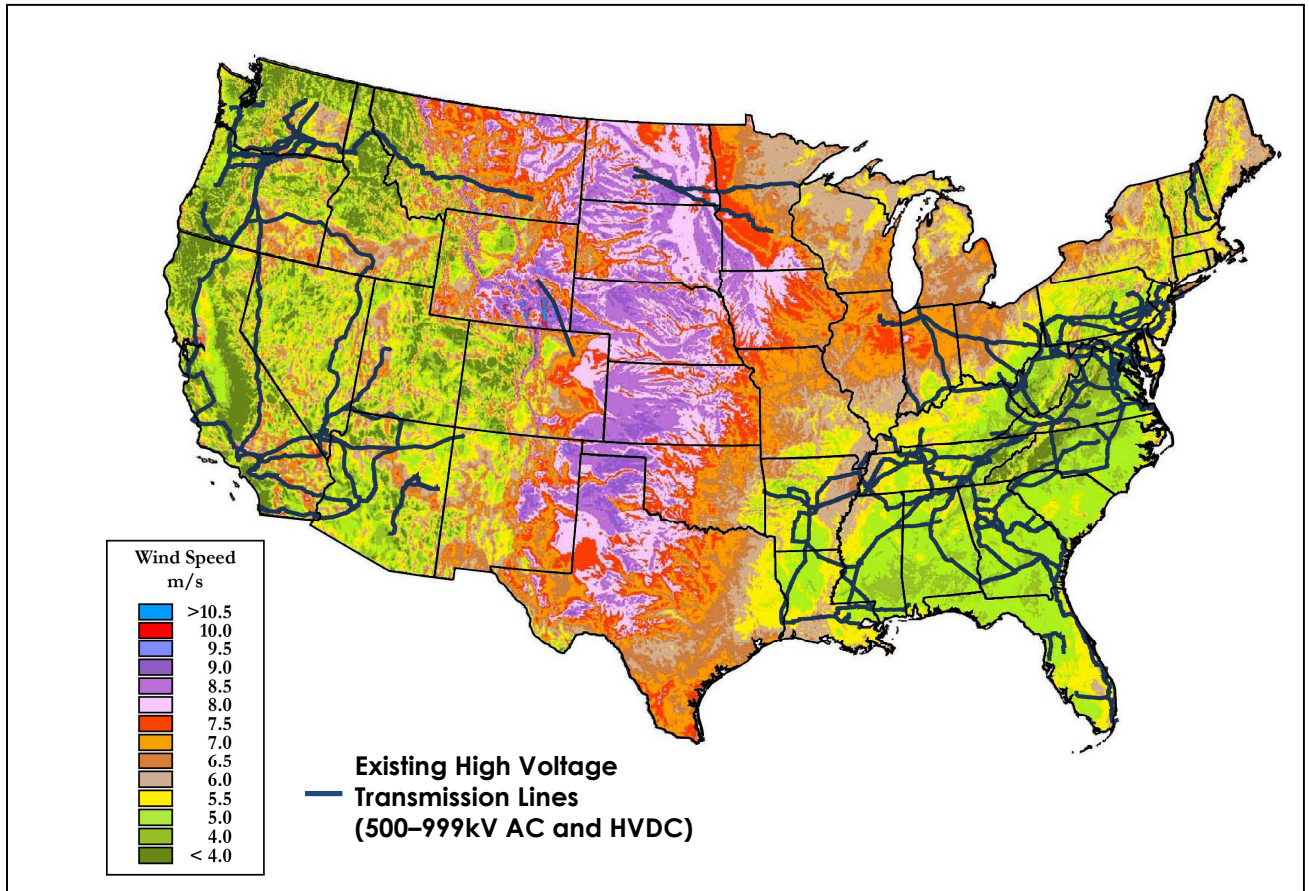
Clean Line Energy Partners LLC (“Clean Line”) respectfully submits these comments in response to the Department of Energy’s (“DOE”) Plan for Conduct of 2012 Electric Transmission Congestion Study (“Congestion Study”) as published in the Federal Register on November 11, 2011. Clean Line appreciates the DOE’s renewed efforts to gather and review existing and new transmission data across the nation (as per 76 FR 70122) to develop a list of congestion areas that may be eligible for backstop authority under 216a of the Federal Power Act.

Clean Line submits the attached comments for consideration.

Background

Clean Line is an independent developer of four long-haul, high voltage direct current (“HVDC”) transmission lines across the United States. Clean Line focuses exclusively on connecting the best renewable energy resources in North America with robust electricity demand centers. It hopes to play an instrumental role in expanding much needed transmission capacity and accelerating the delivery of renewable energy throughout the U.S. The need for lines like those that Clean Line is developing will continue to grow as electricity demand increases in the United States and as the demand for clean power sources accelerates. Technology improvements in wind and transmission make the efficient transportation of wind energy more feasible now than ever before.

Figure I
Best Wind Resources Are Located Far From Existing High Voltage Grid



Source: Wind speed map – NREL and AWS Truepower¹
High Voltage Transmission lines map – Platts POWERMap²

As Clean Line noted in our comments to the 2009 Congestion Study, we urge DOE to consider additional National Interest Electric Corridor (NIETC) designations in order to relieve congestion associated with the wind Conditional Congestion Area in the East. New transmission in these regions will ensure that existing congestion is eliminated and that there is enough additional capacity to allow new renewable resources to serve distant loads.

Furthermore, Clean Line believes that the Department of Energy (DOE), as an administration priority, should encourage transmission developers to propose corridors to be

¹ www.nrel.gov/wind/resource_assessment.html

² www.maps.platts.com

considered for designation, especially in areas that will promote renewable energy development. If DOE does allow developers to request corridors, it should be incumbent on the developer to provide evidence of the congestion and DOE should complete its review of the proposed corridors within a reasonable period of time. Providing timely answers to developers is critical to ensuring that the capital necessary to upgrade our aging transmission system is deployed efficiently.

Transmission Facilitates Renewables Integration

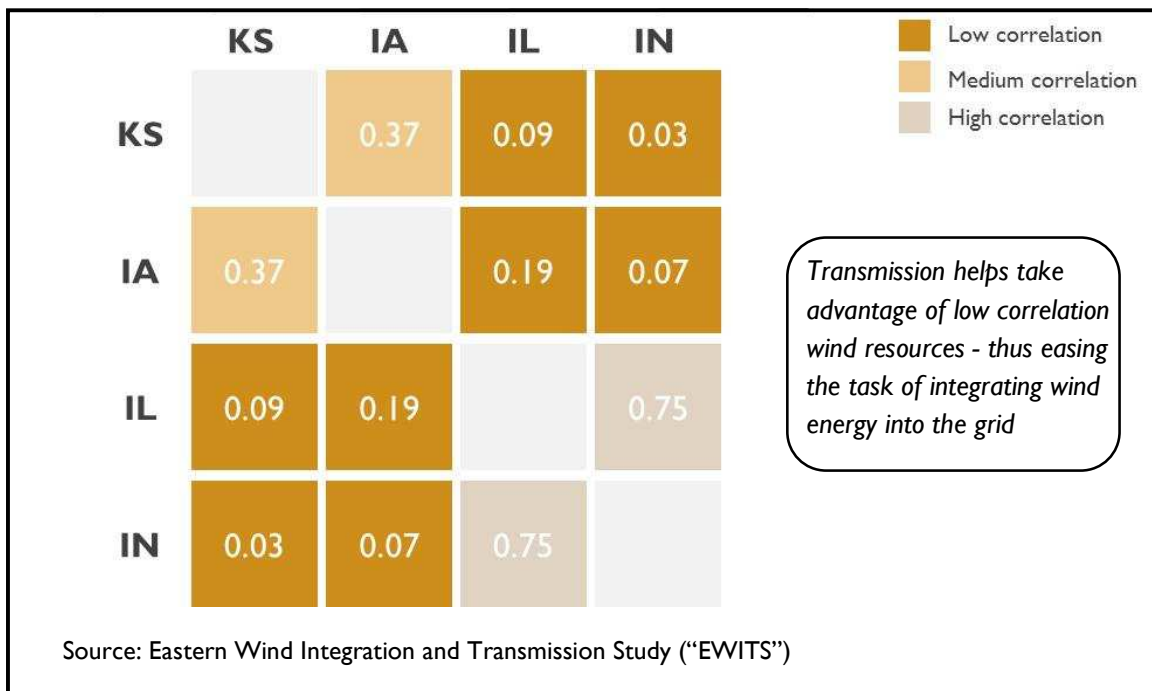
New transmission is required to facilitate increased integration of renewable energy into the nation's grid, both to meet state renewable portfolio standards ("RPS") and to tap into the vast low-cost wind energy resources available in the Great Plains. For example, the Eastern Interconnect Planning Collaborative ("EIPC"), a DOE-funded initiative that is preparing analyses of transmission requirements in the Eastern Interconnect under a range of alternative futures and developing long-term interconnection-wide transmission expansion plans in response to them, has selected three scenarios to be modeled in greater detail in Phase II³, two of which involve a significant transmission build-out eastwards from the Great Plains.

Tapping into diverse wind resources will ease the integration of wind energy into a given RTO. For example, sourcing a portion of the wind energy required to meet the PJM states' RPS requirements from the Great Plains (for instance, from Iowa and Kansas) would lower the cost of integrating large amounts of wind energy. This is because the Great Plains wind is relatively uncorrelated with wind within PJM states (for instance, from Illinois and Indiana) – that is, wind blows in Iowa and Kansas when it is not blowing in Illinois and Indiana and vice

³ EIPC Phase I Report, http://www.eipconline.com/uploads/Phase_I_Report_Final_12-15-2011.pdf

versa; hence a combined wind output of wind energy from these 4 states would be relatively stable and hence easier for PJM to integrate into its system.

Figure 2
Correlation of 10-Minute Wind Energy Generated⁴



The southeast requires a significant amount of new transmission in response to increased demand for renewable energy. A study conducted by Oak Ridge National Laboratory in 2009⁵ to assess the power transfer potential to the southeast in response to a federal RPS mandate or CO2 policy found wind energy transfers at the level of 30-60 GW to be required in to the region, which would require large amounts of new transmission. Existing wind energy contracts by utilities in the southeast are already facing transmission constraints. To cite an example, in its application with the Alabama Public Service Commission to enter into a 202

⁴ <http://www.nrel.gov/wind/systemsintegration/ewits.html>
 "Low correlation": between 0.0 and 0.25; "Medium correlation": between 0.25 and 0.5; "High correlation": between 0.5 and 1.0

Sites selected: KS: #62, IA: #367, IL: #3693, IN: #3579
⁵ "Power Transfer Potential to the Southeast in Response to a Renewable Portfolio Standard: Final Report", <http://info.ornl.gov/sites/publications/files/Pub21494.pdf>

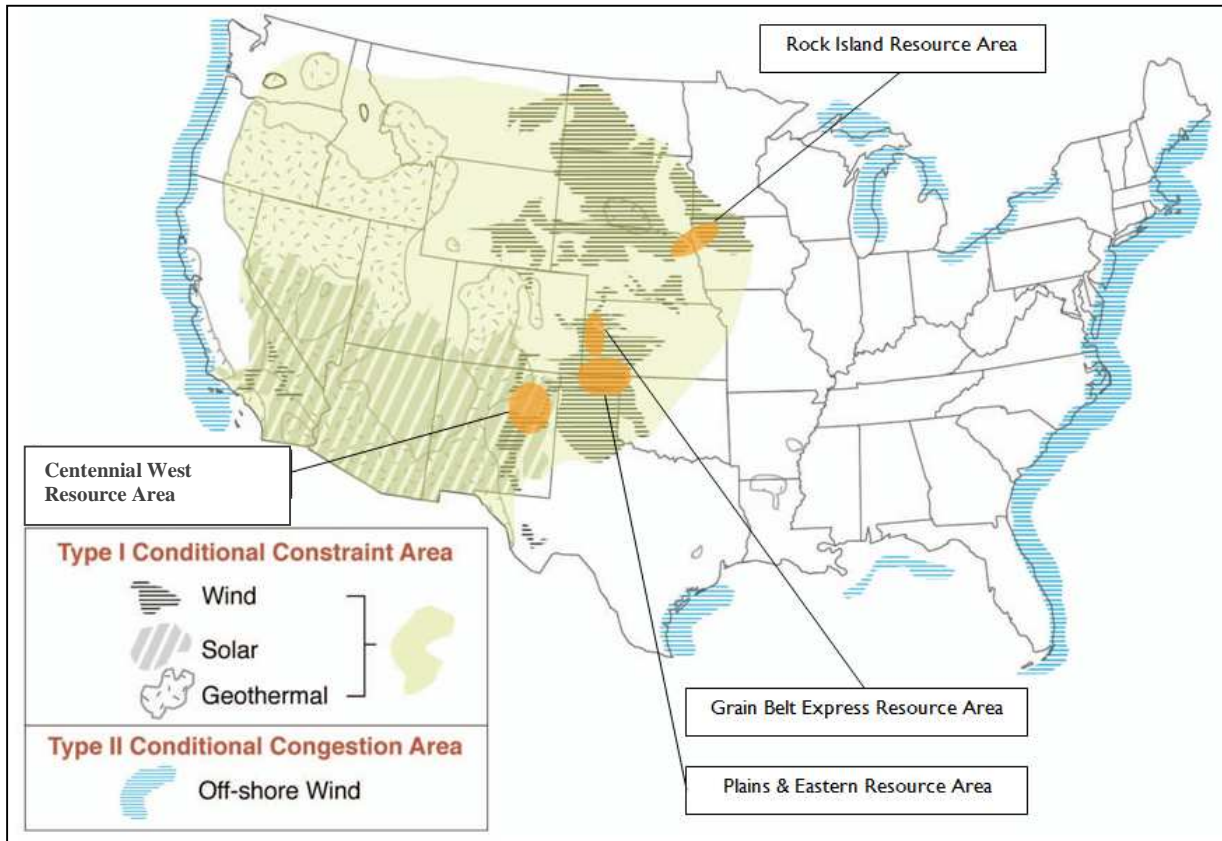
MW wind power purchase agreement (“PPA”) with the Chisholm View Wind Project in central Oklahoma, Alabama Power emphasized that the Chisholm View project “requires the procurement of transmission to effectuate energy delivery of the project’s output through Entergy and SPP balancing authority areas. Accordingly, the actual guaranteed energy deliveries ultimately are a function of the amount of transmission service procured.”⁶

Transmission Could Stimulate Economic Activity in Renewables-Rich States

In the 2009 Congestion Study, DOE notes that the development of additional wind resources in Kansas and Oklahoma could improve the economic vitality of the states’ rural counties, enhance reliability, and potentially reduce electricity costs to consumers, all of which would not be possible without additional transmission capacity. Each of the HVDC lines that Clean Line is developing begins in a resource region that DOE has designated as a Type I Conditional Constraint Area for wind resources, as noted in Figure 3. Additional available transmission capacity in these areas will enable new renewable resources to be developed to serve the load centers in the eastern and southeastern United States.

⁶ Pg. 4 of Petition for a Certificate of Convenience and Necessity by Alabama Power Company, dated June 10, 2011.

Figure 3
Type I and Type II CCA's with Clean Line Origination Points



Source: National Electric Transmission Congestion Study, December 2009. US Department of Energy

As discussed below, there is additional evidence of congestion that DOE should consider when it designates future Critical Congestion Areas and NIETCs.

**Significant Transmission Upgrades Are Needed to Relieve
 Congestion in Western SPP**

There is a present need for transmission that enhances the ability of power to flow from western SPP, where the richest wind resource is located, eastward to locations with high

electricity demand. In the SPP WITF Wind Integration Study⁷ commissioned by SPP, Charles River Associates finds that as more wind is installed, “power flows from western SPP to eastern SPP increase significantly.” The study continues, stating “[t]o accommodate the increased West-to-East flows while meeting the reliability standards of the SPP Criteria, a number of transmission expansions were required.”⁸ In the absence of new transmission, generation will continue to be curtailed in SPP, as noted below, and renewable development will be halted due to the inability to move power to load centers.

**Table I
Curtailments in Southwestern Public Service (“SPS”) Zone⁹**

Price Level (\$/MWh)	2009 Hours
<0	26
0 to 10	51
10 to 20	1,649
Total	1,726
Percent of Year	19.7%

Since SPP can use only a fraction of its vast renewable energy potential, fully tapping its potential will require additional export capability to the Southeast, which is not well endowed with renewable energy resources. SPP borders the Electric Reliability Council of Texas (“ERCOT”) to the South, the Western Electricity Coordinating Council (“WECC”) to the West, and the Midwest ISO (“MISO”) and Entergy to the East. Because SPP’s electrical frequency is asynchronous with ERCOT’s and WECC’s frequencies, the ability to export to these neighboring regions is constrained. SPP’s Wind Integration Study found that “[a] concern is that SPP has limited DC connections with ERCOT (to the south) and WECC (to the west).”¹⁰

⁷ SPP WITF Wind Integration Study, <http://www.crai.com/News/listingdetails.aspx?id=12090>.

⁸ SPP WITF Wind Integration Study, 20, 1-2.

⁹ SPS Zone is the most congested zone in the SPP. Clean Line’s Plains & Eastern project will likely originate from within this zone, thus helping reduce congestion.

¹⁰ SPP WITF Wind Integration Study, 30.

Exports to the East and West appear to be most promising to realizing SPP’s wind potential, but only if transmission lines are developed to efficiently export power over long distances.

As DOE is aware, SPP is in the process of implementing significant upgrades to its AC transmission system. SPP’s Board of Directors approved their “Priority Projects” to relieve congestion, improve SPP’s generation interconnection queue, and enhance transfer capability from SPP West to SPP East. The Priority Projects will heighten the ability of wind farms to transmit power *within* SPP. However, additional transmission capacity is needed to increase the ability to export wind power *out* of SPP. The combination of SPP “Priority Projects” and additional export capability is needed to capitalize on the rich wind resources in SPP.

**Table 2
Wind Capacity Potential by State**

Windy Land Area >= 40% Gross Capacity							
Ranking (by Capacity Potential)	State	Factor at 80m				Wind Energy Potential	
		Total (km ²)	Excluded (km ²)	Available (km ²)	Available % of State	Installed Capacity (MW)	Annual Generation (GWh)
1	Texas	180,822	15,426	165,397	24%	826,983	3,240,930
2	Nebraska	165,445	10,012	155,433	78%	777,165	3,084,090
3	South Dakota	163,281	10,004	153,277	77%	766,383	3,039,460
4	Kansas	163,170	11,105	152,065	71%	760,324	3,024,280
5	North Dakota	160,497	21,932	138,564	76%	692,821	2,728,620
6	Montana	98,309	18,737	79,571	21%	397,857	1,529,560
7	Iowa	72,119	8,400	63,719	44%	318,595	1,232,860
8	Wyoming	70,268	17,787	52,482	21%	262,410	1,043,890
9	Oklahoma	55,593	6,038	49,555	27%	247,773	952,678
10	New Mexico	39,573.80	2,424.70	37,149.10	11.80%	185,745.30	712,877

Source: NREL and AWS Truepower¹¹

As noted in Table 2 above, Oklahoma, Kansas and Texas are all ranked in the top ten in wind capacity potential. Each state has significantly more potential than the capacity of the SPP market. Developers are advancing projects totaling tens of thousands of MW in the Resource Area. Over 23,800 MW of wind projects are in the SPP Generation Interconnection Queue.

¹¹ www.nrel.gov/wind/resource_assessment.html.

Of these projects, 21,265 MW are located in the tri-state region of Kansas, Oklahoma, and Texas (only the northern part of the Texas panhandle is located in SPP). Many of these project will not be completed because there is not enough transmission capacity to export power to other load centers.

Table 3
Wind Projects in SPP Generation Interconnection Queue

SPP State	Wind Projects in SPP Generation Interconnection Queue (MW)
Kansas	9,577
Oklahoma	7,448
Texas	4,240
Nebraska	1,244
Missouri	962
New Mexico	360
Arkansas	0
Louisiana	0
TOTAL	23,831

Source: SPP Generation Interconnection Queue¹²

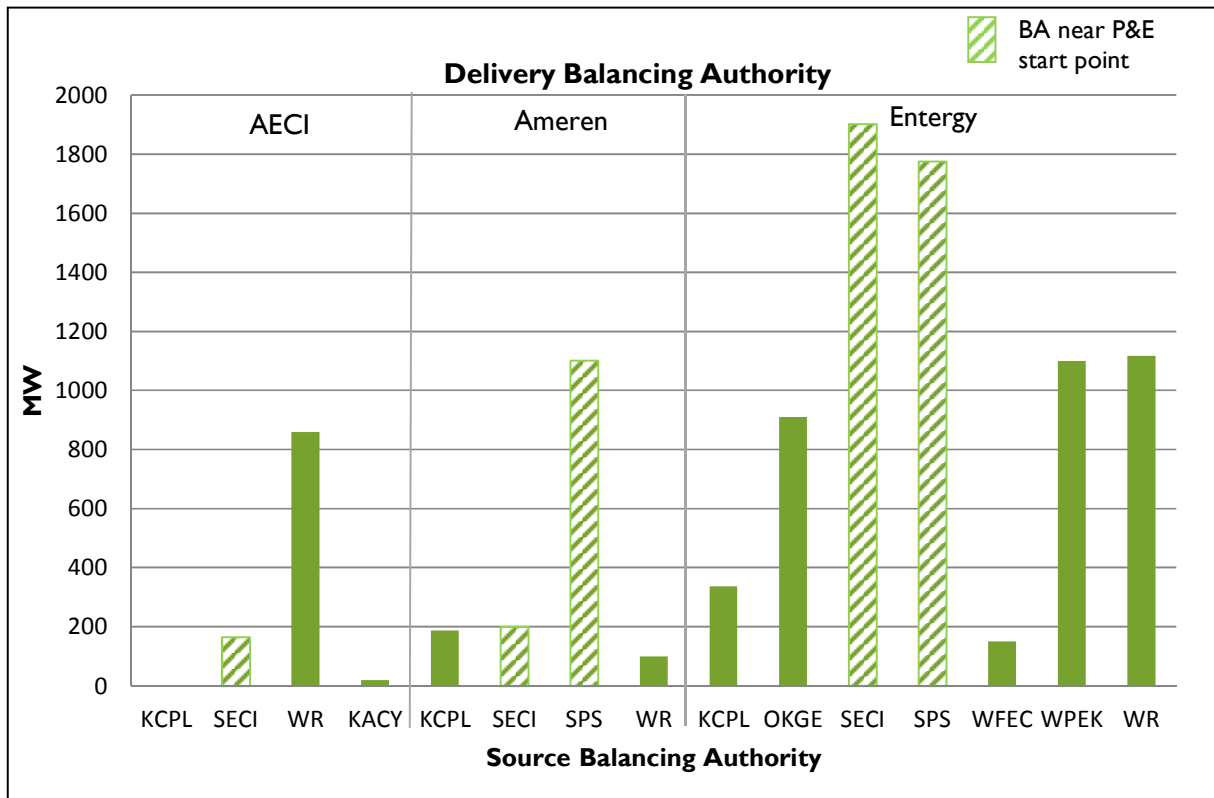
Additional Transmission is Needed to Import Power into the Southeast

Transmission Service Requests (“TSRs”) in SPP also reveal a significant demand to transmit power generated in western SPP to regions east of SPP. Because the great majority of new generation in SPP is wind power, a significant portion of these requests likely come from wind generation projects, which are searching for a way to reach markets east of SPP. Figure 4 below illustrates that as of January 13, 2012 there are nearly 10,000 MW of TSRs from western SPP regions to balancing authorities east of the SPP footprint. More specifically, there are more

¹² https://studies.spp.org/SPPGeneration/GI_ActiveRequests.cfm.

than 5,000 MW of TSRs from balancing authorities in proximity to the Plains & Eastern Clean Line's ("P&E") western terminal to regions east and south of SPP.

Figure 4
Transmission Service Requests from Western SPP to the East/Southeast



Source: SPP OASIS¹³

Western Interconnection

As noted above, Clean Line is developing the Centennial West Clean Line from Eastern New Mexico to the Arizona and California region. This region has been identified by western planning organizations as a major area of concern in the West. The DOE's 2006 Congestion study identified Southern California (spanning the metropolitan areas of Los Angeles and San

¹³ http://www.oatiaoasis.com/spp_default.html.

Diego) and three counties in Arizona as a Critical Congestion Area. DOE later designated this area a National Interest Electric Transmission Corridor (“NIETC”), making this region eligible for FERC backstop siting authority. Clean Line agrees with this corridor designation but urges DOE to expand this designation to allow for imports of renewable energy.

This area has a history of congestion due to the large amount of imports across the region. Clean Line expects this congestion to increase as additional renewable wind resources are developed in eastern New Mexico and as solar resources are developed in Arizona. To meet the growing demand for electricity in the California market, Clean Line suggests that DOE consider designating the northern counties in Arizona, southern Nevada and much of New Mexico as Critical Congestion Areas and NIETCs.

Numerous transmission projects are in the planning and permitting phases of development. The failure of these projects could jeopardize reliability in the Western Interconnection and dramatically increase power prices in the Southwest region.

Clean Line participates in regional and sub-regional transmission planning activities in the Western Interconnection. WECC has led transmission planning efforts in the West for many years, highlighting congestion and identifying areas that may jeopardize reliability and cost consumers millions of dollars in wholesale energy costs. Clean Line urges DOE to work closely with WECC and the other transmission planning organizations in the West to consider the impacts of existing congestion on renewable energy development and the ability to that move power to major load centers. Designating additional constrained areas as Critical Congestion Areas and as NIETCs will help ensure that new transmission gets built.

State Laws

Finally, Clean Line urges DOE to evaluate all lower 48 state laws to determine if independent transmission developers can qualify to become public utilities and build transmission and determine other requirements at the state level needed to site, construct and operate transmission facilities. DOE must consider designating NIETC's in states that prohibit new entrants in the transmission business because they do not serve local load or impose other barriers to entry.

Conclusion

Clean Line appreciates the opportunity to provide comments for the DOE's consideration and also supports the comments of the American Wind Energy Association. We urge the DOE to expeditiously complete the 2012 Congestion Study process with a goal of ensuring that additional renewable resources are not constrained by lack of transmission and that corridors are designated expeditiously.

Respectfully submitted,

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